Claims

1. Method of operating a wind turbine, wherein rotor windings of an induction generator, which comprises stator coils coupled to a voltage grid, fed with rotor currents by a feed-in unit are driven by a rotor of the wind turbine; wherein the frequencies of the fed-in rotor currents are controlled depending on the rotor rotation frequency and the feed-in unit is electrically decoupled from the rotor windings in the case predetermined variations of the grid voltage amplitude

characterized in that

the rotor current feed-in is resumed after the decoupling caused by the variation of the grid voltage amplitude, when the currents generated in the rotor windings by the variation have declined to a predetermined value.

- 2. Method according to claim 1, characterized in that
 - the rotor currents are fed in via a converter coupled to the grid voltage, in particular via an intermediate DC voltage converter with a rotor-sided rotor current converter and a grid-sided grid converter.
- Method according to claim 2, characterized in that
 during the decoupling the grid converter remains coupled to the grid and the rotor current converter is blocked.
- Method according to any of the preceding claims, characterized in that during the decoupling the rotor windings are short-circuited.
- Wind turbine for conducting a method according to any of the preceding claims comprising
 - a rotor with at least one rotor blade, the rotor being rotatably arranged with regard to a substantially horizontal rotor axis;
 - an induction generator whose rotor windings are coupled to the rotor and whose stator coils can be coupled to a voltage grid;
 - a feed-in unit for feeding currents into the rotor windings;

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a control unit for controlling the frequency of the fed-in currents depending on the rotor rotation frequency, and

an emergency unit which can be operated to electrically decouple the feed-in unit from the rotor windings in case of variations of the grid voltage amplitude,

characterized in that

the emergency unit comprises a release arrangement for releasing the rotor current feed-in after decoupling, when the currents generated in the rotor windings by variation of the grid voltage amplitude triggering the decoupling are declined to a predetermined value.

- 6. Wind turbine according to claim 5, characterized in that the rotor is coupled to the rotor windings via a gear unit.
- 7. Wind turbine according to any of claims 5 or 6, characterized in that the feed-in unit comprises a converter coupled to the grid voltage.
- 8. Wind turbine according to claim 7, characterized in that the converter is an intermediate DC voltage converter with a rotor-sided rotor current converter and a grid-sided grid converter.
- 9. Wind turbine according to any of claims 5 to 8, characterized in that the emergency unit comprises a crow bar for short-circuiting the rotor windings.
- 10. Wind turbine according to any of claims 5 to 9, characterized in that the control unit is adapted for controlling the amplitude position and/or the phase position of the currents fed into the rotor windings.